CLAIMS

1. A method of accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies, the method comprising:

generating a periodic perturbation adjacent an area of creation the first eddy, the periodic perturbation having a wavelength capable of exciting at least one instability mode of the first eddy.

2. The method according to claim 1, wherein the periodic perturbation is generated adjacent a flap of the wing.

3. The method according to claim 2, further comprising:

extending a perturbation device from the area adjacent the flap of the wing; and

retracting the perturbation device into one of the wing and the flap.

4. The method according to claim 2, further comprising:

extending an unstreamed element from the area adjacent the flap of the wing; and

retracting the unstreamed element into one of the wing and the flap.

5. The method according to claim 4, wherein the unstreamed element has one of a circular and an elliptical cross section.

6. The method according to claim 2, further comprising:

emitting a jet of fluid from the area adjacent the flap of the wing.

7. A method of accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies, the method comprising:

emitting a jet of fluid transverse to a direction of travel of the aircraft, the jet of fluid causing a periodic perturbation having a wavelength capable of exciting at least one instability mode of the first eddy.

8. The method according to claim 7, wherein the jet of fluid is emitted at a velocity at least equal to a velocity of the aircraft.

9. The method according to claim 8, wherein the jet of fluid is emitted from one of the wing and a flap of the aircraft.

10. A method of accelerating a destruction of first and second contra-rotating vortices formed at a rear of first and second wings of an aircraft, the first contra-rotating vortex formed by a merging of first and second co-rotating eddies, and the second contra-rotating vortex formed by a merging of third and fourth co-rotating eddies, the method comprising:

generating a first periodic perturbation adjacent an area of creation the first eddy, the first periodic perturbation having a first wavelength capable of exciting at least one instability mode of the first eddy; and

generating a second periodic perturbation adjacent an area of creation of the third eddy, the second periodic perturbation having a second wavelength capable of exciting at least one instability mode of the second eddy.

11. The method according to claim 10, wherein the first and second periodic perturbations are generated such that diameters of the first and second vortices are greater than a predetermined proportion of a distance between the first and second vortices.

12. The method according to claim 11, wherein the first and second periodic perturbations are generated such that the diameters of the first and second vortices are greater than about 30% of the distance between the first and second vortices.

13. The method according to claim 12, wherein the first and second periodic perturbations are generated adjacent first and second flap of the first and second wings.

14. The method according to claim 13, further comprising:

extending first and second perturbation devices from the areas adjacent the first and second flap of the first and second wings; and

retracting the first and second perturbation devices.

15. The method according to claim 13, further comprising:

extending first and second unstreamed elements from the areas adjacent the first and second flap of the first and second wings; and

retracting the first and second unstreamed elements.

16. The method according to claim 15, wherein the unstreamed element has one of a circular and an elliptical cross section.

17. The method according to claim 13, further comprising:

emitting first and second jets of fluid from the areas adjacent the first and second flaps of the first and second wings.